

Application No. 09/845,216  
Response to 09/22/2004 Action

Attorney's Docket No. 0119-080

Listing of Claims

1. (canceled)
2. (canceled)
3. (canceled)
4. (canceled)
5. (canceled)
6. (canceled)
7. (canceled)
8. (canceled)
9. (canceled)
10. (canceled)
11. (canceled)
12. (canceled)
13. (canceled)
14. (canceled)
15. (canceled)

16. (New) A matched filter for obtaining a correlation between a signal received through a multipath transmission line and a spreading code sequence, comprising:

N partial filters, each partial filter having a predetermined number m of taps, that are serially connected;

first adder means for adding outputs of enabled partial filters from among the N partial filters;

control means for dividing, based on a time width of effective paths included in the received signal, the spreading code sequence into subsequences, each subsequence having  $m \times n$  chips, activating n partial filters from among the partial filters, wherein n satisfies  $n \times m \times T_s \geq T_d > (n-1) \times m \times T_s$ , where  $T_s$  represents a sampling period of the received signal and  $T_d$  represents a maximum delay time of the multipath signal, and detecting a partial correlation for each subsequence with the received signal by supplying the subsequences, in turn, to the n activated partial filters; and

second adder means for adding the partial correlations;

wherein N, m, and n are integers;  $m \geq 2$ ; and  $N \geq n \geq 1$ .

Application No. 09/845,216  
Response to 09/22/2004 Action

Attorney's Docket No. 0119-060

17. (New) The matched filter of claim 16, wherein the effective paths included in the received signal are determined based upon reliability information such as signal-to-noise ratio and signal-to-interference ratio of the received signal.

18. (New) The matched filter of claim 16, wherein one of the effective paths is a path which is used to determine symbol timing of the received signal.

19. (New) A receiver for a mobile radio communication system that uses a matched filter according to claim 16.

20. (New) An arithmetic unit that operates as a matched filter according to claim 16.

21. (New) A method for obtaining a correlation between a signal received through a multipath transmission line and a spreading code sequence, comprising:

adding outputs of enabled partial filters from among N partial filters being serially connected, each partial filter having a predetermined number m of taps;

dividing, by a control means, the spreading code sequence into subsequences, each subsequence having  $m \cdot n$  chips, based on a time width of effective paths included in the received signal;

activating n partial filters from among the partial filters, where n satisfies  $n \cdot m \cdot T_s \geq T_d > (n-1) \cdot m \cdot T_s$ , where  $T_s$  represents a sampling period of the received signal and  $T_d$  represents a maximum delay time of the multipath signal;

detecting partial correlations for each of the subsequences with the received signal; and

adding the partial correlations;

wherein N, m, and n are integers;  $m \geq 2$ ; and  $N \geq n \geq 1$ .

22. (New) The method of claim 21, wherein the effective paths included in the received signal are determined based upon reliability information such as signal-to-noise ratio and signal-to-interference ratio of the received signal.

23. (New) The method of claim 21, wherein one of the effective paths is a path which is used to determine symbol timing of the received signal.